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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

27 SEP 2004

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| Applicant's or agent's file reference 03op104p | | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/KR2003/000598 | International filing date (day/month/year) 26 MARCH 2003 (26.03.2003) | Priority date (day/month/year) 29 MARCH 2002 (29.03.2002) | |
| International Patent Classification (IPC) or national classification and IPC IPC7 A61K 35/78 | | | |
| Applicant KIM, Sung-Jin | | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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| Date of submission of the demand 29 OCTOBER 2003 (29.10.2003) | Date of completion of this report 27 MAY 2004 (27.05.2004) |
| Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140 | Authorized officer YEO, Ho Sup Telephone No. 82-42-481-5627  |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/000598

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement) under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 15-43

because:

☒ the said international application, or the said claims Nos. 15-43
relate to the following subject matter which does not require an international preliminary examination (*specify*):

The subject-matter of claims 15-43 does not require an international preliminary examination with respect to industrial applicability as it is directed to a method for treatment of the human or animal body by therapy (PCT Article 34(4)(a)(i), Rule 67.1(iv)).

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees:

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

Claims 1-8 and 46 concern a pharmaceutical composition comprising an extract of Liriopsis tuber for protecting brain cells or improving memory. Claims 9-11 concern a foodstuff comprising the composition according to claim 1. Claims 12-14 concern a beverage comprising the composition according to claim 1. The independent claim 44 and 45 concerns the use of an extract of Liriopsis tuber for the preparation of a medicament for preventing or treating neurodegenerative diseases and dementia, respectively.

Although claims 1-14 and 44-46 are relevant to the composition comprising the same active ingredient, there is no technical relationship among a pharmaceutical composition, foodstuff and beverage, and among neurodegenerative diseases, dementia and memory.

Hence, the application contains the following separate groups of inventions not so linked as to form a single general inventive concept (PCT Rule 13.1) :

- i) Claims 1-8 and 46
- ii) Claims 9-11
- iii) Claims 12-14
- iv) Claim 44
- v) Claim 45

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-14, 44-46

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-------------|-----|
| Novelty (N) | Claims | 1-14, 44-46 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-14, 44-46 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-14, 44-46 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

The present invention relates to a composition comprising an extract of Liriopsis tuber for protecting brain cells or improving memory.

The following documents have been considered for the purpose of this report :

D1 = KR 2001-0110284 A (12. 12. 2001)

D2 = KR 2001-0073614 A (01. 08. 2001)

D1 discloses a beverage comprising an extract of Liriopsis tuber which has hypoglycemic, anti-inflammatory, anti-cancer and anti-glycosuria activity.

D2 discloses a wine comprising Liriopsis tuber.

Even though D1 and D2 are relevant to the present invention, none of them teach or fairly suggest the usefulness of Liriopsis tuber for preventing and treating neurodegenerative diseases caused by brain cell damage and for improving memory.

As a consequence, claims 1-14 and 44-46 meet the criteria set out in PCT Article 33(2)-(4).